

## An Attempt to Cross *Biston strataria* Hufn. with *Biston betularia* L. f. *insularia*

By L. W. SIGGS\*

On 27th May, 1974 I was fortunate enough to take a female *B. betularia* of the darkest form of f. *insularia* which laid a considerable number of eggs enabling me to have a supply of pupae in the winter of 1974-75.

I believe that previous crosses between these species have generally been made with typical *betularia* and that f. *insularia* has not been used. In January 1975 I brought some female pupae into a warm room and kept them moist so that they emerged when male *strataria* were available, both from a brood I was rearing and from wild stock taken at M.V. and in an assembling trap.

A pairing between a female *betularia* f. *insularia* and a wild typical *strataria*, took place on 27th February and a batch of eggs was laid. I sent some to Dr. H. B. D. Kettlewell, Professor P. M. Sheppard of Liverpool, and Mr. A. G. Liebert of Somerset, and kept some myself.

My larvae ate readily, but grew slowly, especially in the final instar and then failed to go down in the peat provided and all dried up.

Dr. Kettlewell obtained a few pupae, but they and the rest of the larvae dried up, though he still has a small number of pupae of his 1974 hybrid *betularia* f. *carbonaria* female  $\times$  *strataria* male living.

Mr. Liebert also noted that the growth in the final instar was significantly slower than in typical *strataria*. Four or five pupated and a number went to ground but did not pupate. All were subsequently found dried up.

Dr. J. A. Bishop who reared the Liverpool batch for Professor Sheppard had very few deaths. Four moths emerged in the summer about two weeks after pupation (none with their wings formed properly) and they looked *insularia*-like. Two remained alive as pupae and it is hoped they will come out successfully. Dr. Bishop infers that hybridisation interferes with the obligatory diapause that is present in *betularia* and *strataria*. He thinks that the main reason they did not expand their wings was that, since immediate emergence was not anticipated, a satisfactory place for them to do so was not provided.

On the results of Dr. Kettlewell's, Mr. Liebert's and my broods, Dr. Kettlewell feared there might be a lethal virus disease, but Dr. Bishop's results showed that this is not necessarily so and we have hopes yet. I have kept the *insularia* strain going and hope to repeat the experiment in 1976.

I am grateful to the three gentlemen who tried out the cross, for their comments.

I should welcome any further comments on the drying up of larvae before and after pupation.

\* Sungate, Football Green, Minstead, Lyndhurst, Hampshire.